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(54) Emission microscopy apparatus and method.

(57) An optical emission microscopy system comprises a macro optic system (30) having a high numerical aperture for obtaining global views of an integrated circuit device under test (10). The device under test (10) is subjected to illumination and stimulation conditions, and images are obtained to form a "global difference" image in which defects, wherever located in the chip, can be discerned by the system operator. The operator can select apparent "defect bright spots" to be further inspected, and zoom in with a higher magnification micro optics system (40) to repeat the image formation steps. "Difference images" are processed to further eliminate noise spots using an approved two-stage filtering operation. The system may be operated under manual or automatic control, and may be interfaced to various data input, storage, and output device as desired.

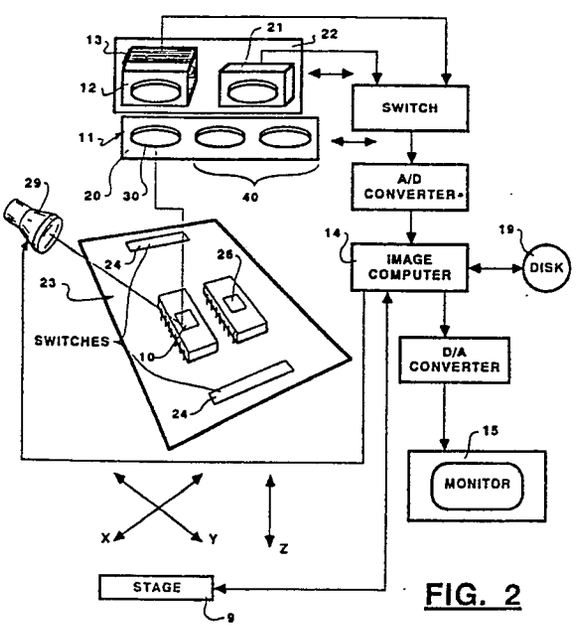

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number

EP 88 10 6874

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A,D	US-A-4 680 635 (N. KHURANA) * abstract; figures 1,3; column 2, lines 8-45; claims 1,7,9,13 *	1,19	G 01 R 31/28 G 01 N 21/88 G 02 B 21/00
A	SOLID STATE TECHNOLOGY February 1984, pages 159-179; K. L. HARRIS et al.: "Automated Inspection of Wafer Patterns with Applications in Stepping, Projection and Direct-Write Lithography" * abstract; page 161, left column, paragraphes 3-5; figure 2 *	1,19	
A	DE-A-2 450 526 (WESTINGHOUSE ELECTRIC CORP.) * figure 1; claims 1-8 *	1,19	
A	US-A-4 389 669 (D. EPSTEIN et al.) * abstract; claim 1 *	1,19	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

G 01 R
G 01 N
G 02 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	22-09-1989	HYLLA W.A.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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